

## REMARKS

Claims 34-36, 40 and 45-57 have been canceled without prejudice as being drawn to non-elected subject matter. Claims 9-10, 23-24 and 58 have been canceled without prejudice. Applicants reserve the right to prosecute the subject matter of the canceled claims in related applications.

Claim 37 has been amended to remove non-elected subject matter as requested by the Examiner. In particular, claim 37 has been amended to recite “isolated eukaryotic cell...”. Claims 38-39 and 42-44 depend upon claim 37, incorporating all of the limitations of claim 37. Applicants reserve the right to prosecute the subject matter of the non-elected subject matter in related applications. In addition, as detailed herein, claims 37-39 and 42-44 should be considered linking claims and, if the claims as amended are found allowable, the non-elected subject matter added back into these claims for further examination. See MPEP 8<sup>th</sup> ed., rev. February 2003 § 809. For clarity, claim 41 has also been amended to recite “isolated eukaryotic cell...”.

Claims 12, 15, 19, 26-29, 33, 44 and 59 have been amended to correct claim dependency and antecedent bases. Specifically, claims 12, 15 and 19 have been amended to depend from claims 8 or 11. Claim 59 has been amended to depend from claim 15. Claims 26, 29 and 33 have been amended to depend from claims 22 or 25. Claims 27 and 28 have been amended to depend upon claim 26 which recites, *inter alia*, a polyadenylation signal sequence. Claim 44 has been amended to depend upon claim 43 which recites, *inter alia*, a nucleic acid insert which encodes interferon  $\alpha 2b$  polypeptide.

Claims 11, 12, 14, 17, 18, 19, 25, 26, 28, 31, 44 and 61 have been amended to correct grammatical errors and clarify claim language. Specifically, Claim 12 has been amended to recite “which comprises” instead of “further comprising”. Claims 19 and 26 have been amended to delete recitation of the term “further”. Claims 18 and 32 have been amended to recite “comprising” instead of “having”. Claims 43 and 61 have been amended to delete an inadvertent “the” in front of “an interferon  $\alpha 2b$  polypeptide”. Claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 have been amended to recite the sequence “of” a SEQ ID NO instead “in” a SEQ ID NO. Claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 have been further amended to recite “nucleotide” sequence instead of “nucleic acid” sequence for consistency. Support for this amendment can be found in the specification, for example, at page 37, line 2.

Claims 8, 11, 12, 14, 15, 17, 18, 19, 21, 22, 25, 26, 28, 31, 32, 33, 37, 42, 44 and 61 have been amended to clarify that which Applicants regard as the invention. Specifically, claims 8 and 22 have been amended to clarify that each of the described elements of the isolated avian lysozyme gene expression control region is obtained from chicken. Support for this amendment can be found in the specification, for example, at page 61, line 19 to page 66, line 3. Claims 8, 11 and 22 have been further amended to clarify that the lysozyme control region directs expression of the nucleic acid in chicken oviduct cells. Support for this amendment can be found in the specification, for example, at page 8, lines 14-17. Claim 22 has been further amended to improve its readability.

Claims 11, 14, 18, 25, 28, 32 and 61 have been amended to delete recitation of a “degenerate variant thereof” and substitute “nucleic acid sequence that hybridizes under highly stringent conditions to the nucleotide sequence of SEQ ID NO: , or its complement” where the particular SEQ ID NO for each claim is provided. Support for this amendment can be found in the specification, for example, at page 22, line 19 to page 25, line 1. Claims 17, 31 and 44 have been amended to delete recitation of a “degenerate variant thereof” and substitute “nucleotide sequence that encodes the polypeptide encoded by SEQ ID NO:66.” Support for this amendment can be found within the knowledge of those of ordinary skill in the art. Claims 17, 31 and 44 refer to a nucleotide sequence of SEQ ID NO:66 which encodes a modified human interferon  $\alpha 2b$ . It is well known that due to the degeneracy of the genetic code, multiple nucleic acid sequence can encode the same protein sequence.

Claim 15 has been amended to clarify that the nucleic acid insert encodes a heterologous polypeptide. Support for this amendment can be found in the specification, for example, at page 47, lines 3-7. Claims 15 and 42 have been further amended to recite, *inter alia*, that one or more codons are optimized for protein expression in an avian. Support for this amendment can be found in the specification at page 45, line 11-20. Claim 42 has been further amended to improve readability by deleting redundant language.

Claim 20 has been amended to clarify that the recombinant DNA molecule is a plasmid vector. Claim 21 has been amended to clarify that the recombinant DNA molecule is a viral vector. Claim 33 has been amended to clarify that the expression vector can be a plasmid vector or viral vector. Support for these amendments can be found in the specification, for example, at page 49, lines 12-14 and at page 53, lines 2-5.

Claims 11, 25 and 37 have been further amended by rewriting in independent form and to incorporate certain limitations of the independent claims.

New claims 62-68 have been added directed to a eukaryotic cell comprising a nucleic acid comprising a lysozyme control region of the invention operably linked to a nucleic acid insert encoding a heterologous polypeptide, wherein the lysozyme control region directs expression of the nucleic acid in chicken oviduct cells. In certain embodiments, the cell can be an avian cell, a chicken cell, or a cultured cell. In certain embodiments, the nucleic acid insert encodes an interferon  $\alpha 2b$  polypeptide and/or has one or more codons optimized for protein expression in an avian. Support for these amendments can be found in the specification, for example, at page 38, lines 6-10, page 44, lines 4-5 and page 51, line 15 to page 52, line 2.

New claim 69 has been added directed to a eukaryotic cell comprising a nucleic acid comprising a lysozyme control region of the invention operably linked to a heterologous polypeptide, wherein the cell is a chicken oviduct cell. Support for this amendment can be found in the specification, for example, at page 51, lines 18-21.

The specification has been amended at page 12, lines 8, 12 and 21, page 55, line 21, page 62, line 3 and page 64, line 13 to correct an obvious formatting error. In particular, each instance of  $\square 2b$  has been replaced with  $\alpha 2b$ . Support for these amendment can be found in the specification at page 46, lines 1-4 (discussing the use of human interferon  $\alpha 2b$  and its optimization for expression in avian cells and page 64, lines 6-10 (indicating IFNMAGMAX encodes human interferon  $\alpha 2b$ ).

No new matter has been added by the present amendments.

After entry of the present amendment, claims 8, 11-22, 25-33, 37-39, 41-44 and 58-69 will be pending in the present application.

#### **Information Disclosure Statement**

Applicants acknowledge the Examiner's assertion that the information disclosure statement filed 10/23/01 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Applicants respectfully submit that the information disclosure statement filed 10/23/01 enclosed a legible copy of the listed references. As evidence, submitted herewith is a copy of a return receipt postcard and Express Mail receipt showing that the Information Disclosure Statement and PTO Form 1449 were filed and received in the United States Patent and Trademark Office ("PTO"). The Express Mail receipt indicates that package weight of 16 pounds, clearly much more than the few pages of the Information Disclosure Statement weighs, evidencing that references were filed with the PTO. For the Examiner convenience, and in an effort to further prosecution of the instant application,

provided herewith is a copy of the information disclosure statement and copies of all references. Please make the Information Disclosure Statement, PTO Form 1449 and references of record in the instant application. Should the Examiner deem it necessary, please charge any required fee to Pennie and Edmonds LLP's Deposit Account No. 16-1150.

### **Specification**

The Examiner objected to the disclosure because the term "□2b" appears in the specification. Applicants have amended the specification to replace "□2b" with "α2b".

Accordingly, Applicants respectfully request withdrawal of this objection.

### **Claim Objections**

The Examiner objected to claims 37-39 and 42-44 because the claims allegedly read on nonelected embodiments, *i.e.*, cells in an animal. At the Examiner's suggestion, Applicants have amended claims 37-39 and 42-44 to recite, *inter alia*, "isolated eukaryotic cell".

Accordingly, Applicants respectfully request withdrawal of this objection.

Applicants take the opportunity to remind the Examiner that since, according to the restriction requirement, claims 37-39 and 42-44 are drawn to two distinct inventions, claims 37-39 and 42-44 are linking claims. The Examiner is further respectfully reminded that

[s]hould any linking claim be allowed, the restriction requirement must be withdrawn. Any claim(s) directed to the nonelected invention(s), previously withdrawn from consideration, which depends from or includes all the limitations of the allowable linking claim must be rejoined and will be fully examined for patentability. Where such withdrawn claims have been canceled by applicant pursuant to the restriction requirement, upon the allowance of the linking claim(s), the examiner must notify applicant that any canceled, nonelected claim(s) which depends from or includes all the limitations of the allowable linking claim may be reinstated by submitting the claim(s) in an amendment. Upon entry of the amendment, the amended claim(s) will be fully examined for patentability.

See MPEP 8<sup>th</sup> ed., rev. February 2003 § 809.

**Claim Rejections - 35 U.S.C. § 112, first paragraph**

Claims 8-33, 37-39, 41-44 and 58-61 were rejected under 35 U.S.C. 112, first paragraph as allegedly failing to comply with the written description requirement. In particular, the Examiner alleges that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specific rejections are discussed below.

The Examiner alleges that the specification does not provide means “to envision the nucleotide sequence of such a lysozyme gene expression control region obtained from alternative sources encompassed by the rejected claims (e.g. turkey, turkey vulture, ostrich, etc.).

Without admitting to the propriety of the rejection and in an effort to advance prosecution of the present application, claims 8 and 22 have been amended to recite, *inter alia*, that each of the recited elements is obtained from chicken. Thus, the claims, as amended, do not encompass hybrid control regions comprising elements from any source nor do they encompass lysozyme gene expression control regions from alternative sources. Accordingly, Applicants submit that the rejection of claims 8 and 22 (and their dependent claims) has been obviated.

The Examiner further alleges that the specification does not provide a basis “to envision ‘degenerate variants’ of the control regions described by SEQ ID NO: 65”.

Without admitting to the propriety of the rejection and in an effort to advance prosecution of the present application, claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 have been amended to delete recitation of “degenerate variant.” Thus, the rejection of claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 is moot.

For the above reasons, Applicants respectfully request withdrawal of these rejections.

**Claim Rejections - 35 U.S.C. § 112, second paragraph**

Claims 8-33, 37-39, 41-44 and 58-61 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The specific rejections are discussed below.

The Examiner alleges that the recitation of the term “avian lysozyme gene expression control region” in claims 8 and 22 is vague and indefinite in that it is allegedly

unclear whether the term refers to a regulatory region obtained from a natural source or whether the term encompasses hybrid control regions comprising elements from different sources.

For clarity purposes only, claims 8 and 22 have been amended to recite, *inter alia*, that each of the recited elements is obtained from chicken. Thus, the claims, as amended, make it clear that each of elements (a)-(g) come from a single source, *i.e.*, from chicken. Accordingly, Applicants submit that the rejection of claims 8 and 22 (and their dependent claims) has been obviated.

The Examiner alleges that the recitation of the term “degenerate variant” in claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 is vague and indefinite in that the metes and bounds of this term is allegedly unclear.

Without admitting to the propriety of the rejection and in an effort to advance prosecution of the present application, claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 have been amended to delete recitation of “degenerate variant”. Thus, the rejection of claims 11, 14, 17, 18, 25, 28, 31, 32, 44 and 61 is moot.

The Examiner alleges that the recitation of the limitation “intrinsically curved” DNA region in claims 8 and 22 is indefinite.

Applicants submit that an “intrinsically curved DNA region” is a term known to one of ordinary skill in the art. In particular, the Definition of GenBank Accession No. X52989 (shown in the specification in Table II on page 65), is “Chicken lysozyme gene intrinsically curved segment of DNA.” Thus, given the disclosure, one of ordinary skill in the art would recognize its meaning. Accordingly, Applicants submit that the rejection of claims 8 and 22 has been obviated.

The Examiner alleges that the recitation of the limitation “wherein the recombinant DNA molecule is a virus” in claim 21 is vague and indefinite because it is allegedly unclear how a DNA molecule can be a virus, which comprises additional elements than just DNA.

Applicants have amended claim 21 to clarify that the recombinant DNA molecule is a viral vector. Recombinant DNA molecules which are viral vectors are fully disclosed in the specification as filed. Accordingly, Applicants submit that the rejection of claim 21 has been obviated.

For the above reasons, Applicants respectfully request withdrawal of these rejections.

**CONCLUSION**

Applicants respectfully request that the amendment and remarks made herein be entered and made of record in the instant application. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned to discuss the same.

Respectfully submitted,

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Adriane M. Antler 32,605  
Adriane M. Antler (Reg. No.)

By: Margaret B. Brivanlou 40,922  
Margaret B. Brivanlou (Reg. No.)

**PENNIE & EDMONDS LLP**  
1155 Avenue of the Americas  
New York, New York 10036-2711  
(212) 790-9090